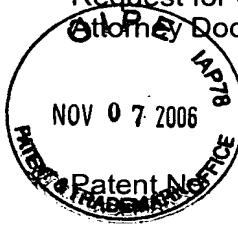


091763822

COTC

Patent No. 7,091,027  
Request for Cert. of Correction dated November 2, 2006  
Attorney Docket No. 0702-010272



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. 7,091,027 Confirmation No. 3747

Inventor : Wallaart et al.

Issued : August 15, 2006

Title : Transgenic Amorpha-4,11-Diene Synthesis

Examiner : Tekchand Saidha

Customer No. : 28289

*Certificate  
NOV 09 2006  
of Correction*

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT  
FOR PTO MISTAKE (37 C.F.R. 1.322(a))

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

ATTENTION: Decision and Certificate of Correction Branch  
Patent Issue Division

Sir:

In accordance with 35 U.S.C. §254, we attach hereto Form PTO/SB/44 and a copy of proof of PTO errors and request that a Certificate of Correction be issued in the above-identified patent. The following errors appear in the patent as printed:

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 8<sup>TH</sup> reference to Vergauwe, line 1, "Agrobacterium iumefaciens" should read  
-- "Agrobacterium tumefaciens" --

(See the Information Disclosure Statement dated June 4, 2001, Form PTO-1449, sheet 2 of 3, reference AR, line 1.)

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 9th reference to Matsushita, line 2, "Farmesyl" should read -- "Farnesyl" --  
(See the Information Disclosure Statement dated June 4, 2001, Form PTO-1449, sheet 2 of 3, reference AS, line 1.)

Column 29, Line 27, Claim 1, "at least 70%" should read -- at least 95% --  
(See the Examiner's Amendment of 3/24/2006, page 2., Claim 43, Line 3)  
(Claim 43 issued as Claim 1.)

Column 29, Line 29, Claim 1, "or the complementary" should read  
-- or the full complementary --  
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 43, Line 3.)  
(Claim 43 issued as Claim 1.)

Column 29, Line 29, Claim 2, "DNA sequence as encoding" should read  
-- DNA sequence encoding --  
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 46, Line 1.)  
(Claim 46 issued as Claim 2.)

NOV 13 2006

Patent No. 7,091,027  
Request for Cert. of Correction dated November 2, 2006  
Attorney Docket No. 0702-010272

Column 29, Line 42, Claim 6, "A host cell" should read -- An isolated host cell --  
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 50, Line 1.)  
(Claim 50 issued as Claim 6.)

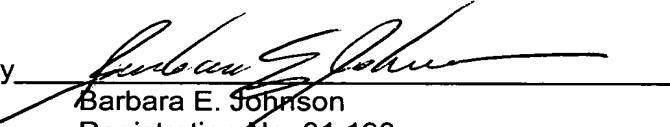
Column 30, Line 40, Claim 21, "A transgenic plant organism, comprising" should read  
-- A transgenic plant, comprising --  
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 65, Line 1).  
(Claim 65 issued as Claim 21.)

Column 30, Line 42, Claim 22, "A transgenic cell," should read  
-- An isolated transgenic cell, --  
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 75, Line 1.)  
(Claim 75 issued as Claim 22.)

Respectfully submitted,

THE WEBB LAW FIRM

By

  
Barbara E. Johnson  
Registration No. 31,198  
Attorney for Registrants  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219  
Telephone: (412) 471-8815  
Facsimile: (412) 471-4094

NOV 13 2006

**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 7,091,027  
 APPLICATION NO. : 09/763,822  
 ISSUE DATE : August 15,2006  
 INVENTORS : Wallaart et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 8<sup>TH</sup> reference to Vergauwe, line 1, "Agrobacterium iumefaciens" should read -- "Agrobacterium tumefaciens" --

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 9th reference to Matsushita, line 2, "Farmesyl" should read -- "Farnesyl" --

Column 29, Line 27, Claim 1, "at least 70%" should read -- at least 95% --

Column 29, Line 29, Claim 1, "or the complementary" should read -- or the full complementary --

Column 29, Line 29, Claim 2, "DNA sequence as encoding" should read -- DNA sequence encoding --

Column 29, Line 42, Claim 6, "A host cell" should read -- An isolated host cell --

Column 30, Line 40, Claim 21, "A transgenic plant organism, comprising" should read -- A transgenic plant, comprising --

Column 30, Line 42, Claim 22, "A transgenic cell," should read -- An isolated transgenic cell, --

MAILING ADDRESS OF SENDER: The Webb Law Firm  
 700 Koppers Building  
 436 Seventh Avenue  
 Pittsburgh, PA 15219

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-2450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select Option

NOV 13 2006



PATENT APPLICATION  
Serial No. 09/763,822  
Atty. Docket No. 702-010272

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit Not Yet Assigned :

In re application of : TRANSGENIC AMORPHA-4,  
Thorvald Eelco WALLAART et al. : 11-DIENE SYNTHESIS

Serial No. 09/763,822 :  
Filed August 27, 1999 :

Pittsburgh, Pennsylvania  
June 4, 2001

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Pursuant to the requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant submits this Information Disclosure Statement which includes a completed Form PTO-1449. The references identified in Form PTO-1449 were cited in the International Search Report for the underlying PCT Application No. PCT/EP99/06302. Copies of the International Search Report and the references are enclosed.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231 on June 4, 2001.

Barbara E. Johnson, Registration No. 31,198

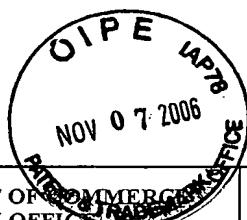
(Name of Registered Representative)

Signature

06/04/2001

Date

NOV 13 2006



Sheet 2 of 3

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT STATEMENT BY APPLICANT (Use several sheets if necessary)	ATTY. DOCKET NO. 702-010272	SERIAL NO. 09/763,822
	APPLICANT Thorvald Eelco WALLAART et al.	
	FILING DATE August 27, 1999	GROUP Art Unit Not Yet Assigned

### U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER					DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA										
	AB										
	AC										
	AD										
	AE										
	AF										
	AG										
	AH										
	AI										
	AJ										
	AK										

### FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER					DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
											YES	NO
	AL											
	AM											
	AN											
	AO											
	AP											

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AQ		Wallaart, T.E. et al., "Bioconversion of Dihydroartemisinic Acid into the New Antimalarial Drug Artemisinin", <u>Pharmacy and World and Science</u> , Vol. 16, No. 3, P. C4, abstract, 1994
AR		Vergauwe, A. et al., "Agrobacterium tumefaciens-mediated Transformation of <i>Artemisia annua</i> L. and Regeneration of Transgenic Plants", <u>Plant Cell Reports</u> , Vol. 15, No. 12, pp. 929-933, 1996
AS		Matsushita, Y. et al., "Cloning and Analysis of a cDNA Encoding Farnesyl Diphosphate Synthase from <i>Artemisia annua</i> ", <u>Gene</u> , Vol. 172, No. 2, pp. 207-209, June 26, 1996

EXAMINER   DATE CONSIDERED  

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

NOV 13 2006



<b>FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE</b> <b>PATENT AND TRADEMARK OFFICE</b> <b>INFORMATION DISCLOSURE STATEMENT</b> <b>STATEMENT BY APPLICANT</b> <b>(Use several sheets if necessary)</b>	ATTY. DOCKET NO. 702-010272	SERIAL NO. 09/763,822
	APPLICANT Thorvald Eelco WALLAART et al.	
	FILING DATE August 27, 1999	GROUP Art Unit Not Yet Assigned

### U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER						DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AA											
AB											
AC											
AD											
AE											
AF											
AG											
AH											
AI											
AJ											
AK											

### FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER					DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
											YES	NO
	AL											
	AM											
	AN											
	AO											
	AP											

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AQ	Brodelius, P., "Metabolic Engineering of Secondary Metabolism in <i>Vanilla Planifolia</i> and <i>Artemisia annua</i> ", <i>Book of Abstracts 211<sup>th</sup> ACS National Meeting</i> , abstract, March 24-28, 1996
	AR	Park, C. et al., "Expression, Secretion, and Processing of Rice alpha-Amylase in the Yeast <i>Yarrowia lipolytica</i> ", <i>Journal of Biological Chemistry</i> , Vol. 272, No. 11, pp. 6876-6881, 1997
	AS	Chang, C. et al., "Improvement of Heterologous Protein Productivity Using Recombinant <i>Yarrowia lipolytica</i> and Cyclic Fed-Batch Process Strategy", <i>Biotechnology and Bioengineering</i> , Vol. 59, No. 3, pp. 379-385, 1998

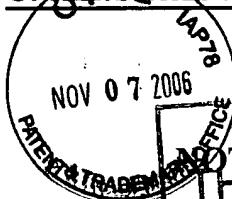
EXAMINER \_\_\_\_\_ DATE CONSIDERED \_\_\_\_\_

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

NOV 13 2006

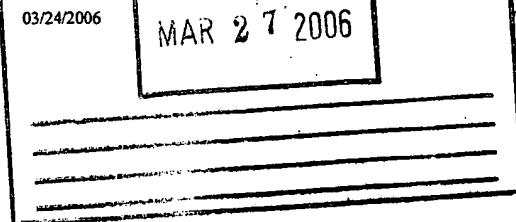


UNITED STATES PATENT AND TRADEMARK OFFICE



RECEIVED  
NOTICE OF ALLOWANCE  
THE WEED LAW FIRM AND FEE(S) DUE

7590  
Barbara E Johnson  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219-1818



UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

EXAMINER	
SAIDHA, TEKCHAND	
ART UNIT	PAPER NUMBER
1652	
DATE MAILED: 03/24/2006	

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,822	04/24/2001	Thorvald Eelco Wallaart	702-010272	3747

TITLE OF INVENTION: TRANSGENIC AMORPHA-4,11-DIENE SYNTHESIS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$0	\$1400	06/26/2006

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

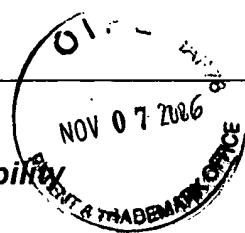
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

NOV 13 2006

**Notice of Allowability**

Application No.	Applicant(s)
09/763,822	WALLAART ET AL.
Examiner	Art Unit
Tekchand Saidha	1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 27 February 2006.
2.  The allowed claim(s) is/are 43,46-65 and 75-84.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's-Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

NOV 13 2006

**Notice of Allowability**

1. Request for Continued Prosecution (RCE) under 37 CFR 1.114, filed on 27 February 2006, based on parent Application No. 09/763,822 is acceptable and a RCE has been established. An action on the RCE follows.
2. Applicants' amendment filed along with papers for RCE is also acknowledged.
3. Claims 43, 45-65, 69 and 71-86 are present in this application.
4. Claims **43, 46-65 & 75-84** are allowed, subject to the following Examiner's Amendment.
5. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gwen R. Wood on March 9, 2006.

**Cancel claims 45, 69, 71-74 & 85-86 without prejudice.**

**Amend claims as follows:**

Claim <sup>43</sup>, line 3, delete '70%' and replace with '95%'.  
Claim <sup>43</sup>, line 3, after 'or the' insert 'full'.

Claim <sup>46</sup>, line 1, after 'DNA sequence' delete 'as'.

Claim <sup>50</sup>, line 1, delete 'A' before 'host cell', and replace with 'An isolated'.

Claim <sup>65</sup>, line 1, after 'transgenic plant' delete 'organism'.

Claim <sup>75</sup>, line 1, delete 'A' before 'transgenic cell', and replace with 'An isolated'.

6. The following is an examiner's statement of reasons for allowance:

This Application provides novel nucleic acid sequence of SEQ ID NO: 13 encoding a synthase. Vectors, host cells and a process of producing the enzyme recombinantly are described.

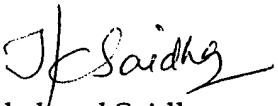
No prior art reference or sequence of record, however, taken alone or in combination teach the claimed invention or provide motivation to one of ordinary skill in the art to use the skills available in the area of enzymology or molecular biology, to make the invention obvious.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tekchand Saidha whose telephone number is (571) 272 0940. The examiner can normally be reached on 8.30 am - 5.00 pm.

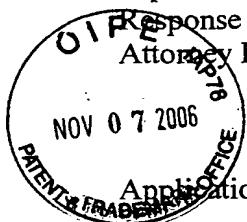
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (571) 272 0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Tekchand Saidha  
Primary Examiner, Art Unit 1652  
Recombinant Enzymes, E03A61 Remsen Bld.  
400 Dulany Street, Alexandria, VA 22314  
Telephone : (571) 272-0940  
March 9, 2006

NOV 13 2006

Application No. 09/763,822  
Paper dated February 24, 2006  
Response to Office Action dated September 30, 2005  
Attorney Docket No. 0702-010272



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 09/763,822  
Applicants : Thorvald Eelco Wallaart et al.  
Filed : April 24, 2001  
Title : TRANSGENIC AMORPHA-4, 11-DIENE  
SYNTHESIS  
Group Art Unit : 1652  
Examiner : Tekchand Saidha  
Confirmation No. : 3747 Customer No. 28289

**Mail Stop AF**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT AFTER FINAL

Sir:

In response to the Office Action, dated September 30, 2005, Applicants hereby submit the following amendments, along with a two-month Petition for Extension of Time.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks** begin on page 8 of this paper.

A Request for Continued Examination is filed concurrently herewith.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Commissioner for Patents, Alexandria, VA 22313-1450 on February 24, 2006.

Bruce L. White

(Name of Person Mailing Paper or Fee)

Bruce L. White 02/24/06  
Signature Date

**NOV 13 2006**

Application No. 09/763,822  
Paper dated February 24, 2006  
Response to Office Action dated September 30, 2005  
Attorney Docket No. 0702-010272

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

1-42. (Cancelled)

*Ex Amended* 43. (Previously Presented): An isolated DNA sequence encoding a polypeptide having the enzymatic activity of amorpha-4,11-diene synthase, wherein the DNA sequence exhibits at least [70%] homology to SEQ ID NO: 13 or the <sup>full</sup> complementary strand thereof. *95%*

*44.* (Cancelled).

*Cancelled by Ex. Amend.* 45. (Previously Presented). The DNA sequence [as] claimed in claim 43, which is at least 80% homologous to SEQ ID NO: 13.

*Ex Amended* 46. (Currently Amended): The An isolated DNA sequence [as] claimed in claim 43, encoding a polypeptide having the enzymatic activity of amorpha-4,11-diene synthase which has the sequence of SEQ ID NO: 13.

*Ex Amended* 47. (Previously Presented): The DNA sequence as claimed in claim 43, wherein the sequence has been isolated from plants producing amorpha-4,11-diene.

*Ex Amended* 48. (Previously Presented): A method for producing amorphadiene synthase, comprising transforming or transfecting a host cell with the DNA sequence claimed in claim 43.

NOV 13 2006

5. 49. (Previously Presented): A DNA construct comprising the DNA sequence as claimed in claim 43 operably linked to suitable transcription initiation and termination sequences.

6. *An isolated*  
4. *Amend* 50. (Currently Amended): [A]host cell comprising the DNA sequence as claimed in claim 43.

7. 51. (Previously Presented): The host cell as claimed in claim 50, wherein the cell is a bacterial cell.

8. 52. (Previously Presented): The host cell as claimed in claim 50, wherein the cell is a plant cell.

9. 53. (Previously Presented): The host cell as claimed in claim 52, wherein the cell is derived from a plant itself producing sesquiterpenes.

10. 54. (Previously Presented): The host cell as claimed in claim 50, wherein the cell is a cell selected from the group consisting of *A. annua*, *V. oblongifolia* and *E. coli*.

11. 55. (Previously Presented): The host cell as claimed in claim 53, wherein the cell is derived from a plant selected from the group consisting of the genera *Carum*, *Cichorium*, *Daucus*, *Juniperus*, *Chamomilla*, *Lactuca*, *Pogostemon* and *Vetiveria*.

12. 56. (Previously Presented): The host cell as claimed in claim 52, wherein the cell is derived from a plant, and wherein the biosynthesis of sesquiterpenoids can be elicited.

13. 57. (Previously Presented): The host cell as claimed in claim 56, wherein the cell is derived from a plant selected from the group consisting of the genera *Capsicum*, *Gossypium*, *Lycopersicon*, *Nicotiana*, *Phleum*, *Solanum* and *Ulmus*.

NOV 13 2006

Application No. 09/763,822  
Paper dated February 24, 2006  
Response to Office Action dated September 30, 2005  
Attorney Docket No. 0702-010272

(14) 58. (Previously Presented): The host cell as claimed in claim 52, wherein the cell is derived from a plant selected from the group consisting of soybean, sunflower and rapeseed. 8

(15) 59. (Previously Presented): The host cell as claimed in claim 50, wherein the cell is a yeast cell. 6

(16) 60. (Previously Presented): The host cell as claimed in claim 59, wherein the yeast cell is a cell selected from the group consisting of *Saccharomyces cerevisiae* and *Pichia pastoris*. 15

(17) 61. (Previously Presented): The host cell as claimed in claim 59, wherein the cell is an oleaginous yeast cell. 15

(18) 62. (Previously Presented): The host cell as claimed in claim 61, wherein the oleaginous yeast cell is a *Yarrowia lipolytica* cell. 17

(19) 63. (Previously Presented): The host cell as claimed in claim 50, which cell is part of a tissue or organism. 6

(20) 64. (Currently Amended): The host cells cell as claimed in claim 50. A transgenic plant tissue, comprising at least

(21) 65. (Currently Amended): The host cells cell as claimed in claim 50. A transgenic plant organism, comprising at least

66-68. (Cancelled).

69. (Withdrawn): A method of preparing amorphadiene, comprising the steps

of:

(W0249334.1)

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a) transfected or transforming a suitable host cell with a DNA sequence as claimed in claim 43 to obtain transgenic host cells;

b) expressing the said DNA sequence in the presence of farnesyl pyrophosphate (FPP) to form amorphadiene; and

c) isolating the amorphadiene thus formed,  
wherein the expression level of the amorphadiene synthase is higher in transgenic host cells, tissues or organisms harboring an endogenous version of the DNA sequence than in non-transgenic host cells, tissues or organisms.

70. (Cancelled).

*Cancelled*  
*Per Amendt*  
*ET*

71. (Withdrawn): A method of preparing artemisinin, comprising:

a) transfected or transforming a suitable host cell, tissue or organism with a DNA sequence as claimed in claim 43 to obtain transgenic host cells, tissues or organisms;

b) expressing the said DNA sequence in the presence of farnesyl pyrophosphate (FPP); and

c) isolating the amorph-4,11-diene thus formed,  
wherein the transgenic host cells, tissues or organisms harbor the genetic information coding for the enzymes that further convert amorph-4,11-diene to artemisinin and wherein the expression level of the amorph-4,11-diene synthase is higher in transgenic host cells, tissues or organisms harboring an endogenous version of the DNA sequence than in non-transgenic host cells, tissues or organisms.

72. (Withdrawn): A source of artemisinin, comprising host cells, tissues or organisms harboring a DNA sequence as claimed in claim 43 and the genetic information coding for the enzymes that further convert amorph-4,11-diene to artemisinin, which host cells, tissues or organisms have expressed the said DNA sequence.

73. (Withdrawn): The source as claimed in claim 72, wherein the cells are cells selected from the group consisting of bacterial cells, yeast cells or plant cells.

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74. (Withdrawn): The source as claimed in claim 72, wherein the cells are disrupted.

*Ex-  
Q/mend* 22. (Currently Amended): *An isolated* [A] non-human transgenic cell, tissue or organism harboring in its genome more copies of the DNA sequence as claimed in claim 43 than are present in a corresponding non-transgenic cell, tissue or organism.

23. (Previously Presented): The transgenic cell as claimed in claim 75, which cell is an *E. coli* cell.

24. 22. (Previously Presented): The transgenic cell as claimed in claim 75, which cell is a *Saccharomyces cerevisiae* cell.

25. 22. (Previously Presented): The transgenic cell as claimed in claim 75, which cell is a *Yarrowia lipolytica* cell.

26. 22. (Previously Presented): The transgenic organism as claimed in claim 75, wherein the organism is a plant itself producing sesquiterpenes.

27. 24. 20. (Previously Presented): The transgenic organism as claimed in claim 79, wherein the organism is an organism selected from the group consisting of *A. annua* and *V. oblongifolia*.

28. 24. 21. 20. (Previously Presented): The transgenic organism as claimed in claim 79, wherein the organism is a plant selected from the group consisting of the genera *Carum*, *Cichorium*, *Daucus*, *Juniperus*, *Chamomilla*, *Lactuca*, *Pogostemon* and *Vetiveria*.

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82. (Previously Presented): The transgenic organism as claimed in claim 75, wherein the organism is a plant in which the biosynthesis of sesquiterpenoids can be induced by elicitation.

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83. (Previously Presented): The transgenic organism as claimed in claim 75, wherein the organism is a plant selected from the group consisting of the genera *Capsicum*, *Gossypium*, *Lycopersicon*, *Nicotiana*, *Phleum*, *Solanum* and *Ulmus*.

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84. (Previously Presented): The transgenic organism as claimed in claim 75, wherein the organism is a plant selected from the group consisting of soybean, sunflower and rapeseed.

Cancelled

See

67 Amend.

85. (Currently Amended): The DNA sequence as claimed in claim 44~~43~~<sup>1</sup>, which is at least 90% homologous to SEQ ID NO: 13.

86. (Currently Amended): The DNA sequence as claimed in claim 44~~43~~<sup>1</sup>, which is at least 95% homologous to SEQ ID NO: 13.

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present invention, namely, DNA sequences which exhibit at least 70% homology to SEQ ID NO: 13.

Claims 75-84 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of written description. In the Office Action, it is asserted that the language "non-human" is not supported in the original disclosure and is requiring that this language be deleted from the claims. Claim 75 has been amended to delete the recitation "non-human."

In view of the foregoing amendments and remarks, it is respectfully submitted that all of the pending claims in the present application comply with the requirements of §§ 101 and 112. Accordingly, reconsideration and withdrawal of the rejection and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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